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ABSTRACT

This paper summarizes and illustrates an approach to assessment of communication development and treatment which focuses on the early relationships of preconversational children with their significant adults. The assessment approach is part of the Ecological Communication (ECO) model, which views caregivers of delayed children as critical to the communicative development of children, as their use of interactive and communicative strategies allows the children to learn spontaneously from them during frequent, habitual conversational exchanges. The model focuses on five developmental competencies: becoming play partners, becoming turn-taking partners, becoming nonverbal communication partners, becoming language partners, and becoming conversation partners. The paper presents a brief history and theoretical framework for the approach; reviews the dimensions of the ECO model with an emphasis on assessment; and illustrates the approach with case studies, one for each of the five developmental competencies. Appendices contain assessment instruments and handouts. (48 references.) (JDD)

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A Social Partnership Model for Assessing Early Communication Development

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Recent achievements in several fields of child development have alerted us to certain interactive processes that are essential to communication development and that have not traditionally been the focus of clinical and educational efforts. This article summarizes and illustrates one approach to assessment and treatment that integrates several of these achievements. This approach focuses on the early relationships of preconversational children and their significant adults. By preconversational, we mean persons who have yet to develop a generalized communicative habit in a flexible range of social conversations. The ECOLOGICAL COMMUNICATION (ECO) model, of which the assessment approach is a part, is a dyadic approach to the interactive and conversational relations of children within their natural learning contexts.

Until very recently, communication problems were traditionally defined in terms of persons who were already talking and having communicative relationships. Now that we are aware of the influences of early interaction on communication development (Bruner, 1983; Kaye, 1976; MacDonald, 1989; Stern, 1985), we need to identify some of the critical competencies and strategies that will assist both children and their significant adults in becoming conversational partners.

The approach presented here has been developed within a series of clinical research programs that have studied the relationships between developmentally delayed children and their parents, teachers, and other caregivers (Dobe, 1989; McLowry, 1981; MacDonald & Gillette, 1989; MacDonald & Gillette, 1986; Owens & MacDonald, 1982; Young, 1988). The children represented varying levels of development, from nonresponsive to communicating in sentences. The common denominator of these children was that they communicated much less than they knew and that they did not engage regularly in conversational relationships with others. In the adult–child treatment programs, the overriding goal was to shift minimally interactive and communicative children, who operated primarily in their own worlds, to ones who actively interacted and conversed with the people around them. The ECO approach addressed caregivers of delayed children as critical to the communicative development of their children, under the assumption that their use of interactive and communicative strategies would allow the children to learn spontaneously from them during frequent, habitual conversational exchanges (Bronfenbrenner, 1979; Wells, 1981).

The clinical studies conducted both with this and related models (Gillette & MacDonald, 1989; Girolometto, 1986; MacDonald, 1989; Mahoney, 1988; Tannock, 1988) support the critical role of the interactive context of child and adult in the developmentally delayed child's communicative development. (See MacDonald, 1989, for a detailed account of research findings on the ECO model). These findings corroborate recent research across the disciplines of early childhood education (Elkind, 1987), special education (Mahoney, 1988; Tannock, 1988), and speech/language pathology (Girolometto, 1988; Wells, 1981). Further, there have been several

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challenges and dilemmas that society faces in meeting the needs of children with developmental delays. They include:

1. Developmental needs, legal mandates, and ethical considerations argue forcibly for systematic attention to the social development of preconversational children.
2. Parents and other caregivers all inevitably influence their children's social and communicative development, yet they have virtually no access to education for that task.
3. Few professionals have access to developmental and practical training in early parent-child relationships, including training in productive adult interaction styles for communication development.
4. Professional and educational approaches to communication development have focused predominantly on structural aspects of language for children who have conversational competencies needed to develop advanced speech and language for communication.
5. Professionals are legally mandated to serve a population whose developmental competencies they have not been trained to serve.
6. Parents have legal access to direct involvement in individual educational plans, yet they rarely have access to education that would make them competent for that involvement.

This article will now present a brief history and theoretical framework for the approach. Next, the dimensions of the ECO model will be briefly reviewed, emphasizing the task of assessment within this article but noting that the model provides a parallel treatment program (Gillette, 1989; Gillette & MacDonald, 1989; MacDonald, 1989). Finally, we will illustrate the approach with case studies at the levels of the five developmental competencies addressed by the model.

History and Theoretical Framework

Recent theories and research concerning social and communicative development have begun to illuminate the inevitable role significant adults play in children's communicative development. The effect this finding has on early childhood educators, speech/language pathologists, administrators and graduate training programs is that we must address more than the child himself if we are to understand the dynamics of his social and communicative development (Bronfenbrenner, 1979; Bruner, 1983; Goldberg, 1977; Lewis and Rosenblum, 1974). Consequently, the ECO approach extends the assessment and treatment of children to include active evaluation and participation of parents and significant others. In fact, Bronfenbrenner (1979) has articulated a primary ecological view of child development when he stated: "If one member of a (parent-child) dyad undergoes developmental change, the other is also likely to do so." (Page 65)

The study of child development has made major strides in recent years. At least two important movements appear to have spurred the changes. First, interdisciplinary support has accumulated for the importance of interactive play and preverbal communication as prerequisites to both social development and communication development (Bruner, 1983; Bullowa, 1979). Clearly, new teaching styles were needed which emphasized reciprocal dyadic learning and which recognized that communication development begins long before first words (Cross, 1985; MacDonald and Gillette, 1984; Mahoney, 1988; Siegel-Causey, Ernst, & Guess, 1987; Sugarman, 1984; Wells, 1981).

Second, the pragmatics movement heightened our awareness of communication delays beyond those involving semantics and syntax (Lund & Duchan, 1983; Watzlawick, Beavin, & Jackson, 1967). Greater importance was now placed on the social use and context of communication than on the form and content of language alone (Bates, 1976; Wells, 1981). Educators and clinicians now needed to be aware of how children used communication and what kinds of conversational relationships they had. In exploring children's conversations, it became a logical extension to include significant caregivers in the assessment and intervention of children with communication delays. Additionally, this role needed to entail assessment of and treatment planning for the caregiver in active communicative relationships with the child, rather than merely as an informant or observer (Fey, 1986; MacDonald, 1989).

A parallel trend emerged in the study of child development in general. Interpersonal approaches began to view parent–child interaction as the active context for development and hence for intervention (Dunst, 1985; Lewis & Rosenblum, 1974; Stern, 1985). Bronfenbrenner (1979) encouraged an ecological perspective in arguing that, to be fruitful, a view of development must consider the adult–child dyad as the dynamic unit of development rather than the child's performance alone. That is, he viewed the child as developing in intimate, reciprocal exchanges with significant others, who, with the child, formed a dynamic developing unit. Consequently, a growing body of knowledge, as well as clinical approaches, address the adult–child dyad as the active unit of development and embrace the two–person nature of social and communicative development within assessment and intervention approaches. The following basic premises of the ECO assessment approach have evolved from such literature as well as several years of clinical research with children with developmental delays.

Basic premises. 1) Children learn to interact, play, communicate, talk, and have conversations from their natural interactions with primary social partners. 2) Adults can alter the structural, cognitive, and social aspects of their natural interactions to help the child actively learn to communicate. 3) Any professional, caregiver or significant adult who hopes to help a child communicate can realize his or her own potential role in maintaining or advancing the child's current skills. When adults interact with children using certain strategies, they can influence the communicative development of the child. 4) Children have sharply differential needs in their communication learning; one or more of at least five areas may be the source of the problem: action knowledge, interactions, communication, language and conversation. An adequate program needs to identify which are the critical problem areas for the child rather than merely target the most apparent delay. 5) A child learns either how to or how not to communicate in his every interaction with others, and the adult's strategies in interacting with the child are the primary tools we have to make the child more communicative and less isolated.

The ECO Scales Assessment Model

The current assessment model, the ECO Scales, consists of child, adult and interactive components as presented in Table 1. The rationale for each competency area will be presented, then illustrated by a case study. The case studies in this article represent some of the developmentally delayed children who were involved in the research during the development of the approach (MacDonald & Gillette, 1989). While the cases are presented to illustrate the individual subscales, we usually use the total scale as a screening for problems, then refer to the subcategories for further analysis and programming. (See Appendix)

Becoming Play Partners

Rationale for competency. The ECO Scales assess the extent to which a child and adult are in the kind of balanced and matched interactive habit that appears necessary for social and communicative learning (Greenspan, 1985; Mahoney, 1988; Stern, 1977, 1985; Wells, 1981). "Social play" is a term for the joint activity routines in which child and adult become finely tuned to each other by taking turns and acting reciprocally with each other (Bruner, 1983; Snow, 1984), rather than in the parallel or one–sided ways often characterized by traditional teaching approaches. Children learn that they are expected to initiate, respond, and stay in extended interactions with people. While staying in back and forth routines may at first appear primitive and only remotely related to social and communicative growth, it is clear that many people with delays do not have this basic interactive habit (Clark & Seifer, 1983; Siegel-Causey, et al.,1987). They do not seem to recognize the social value of the habit of give and take. Since language and communication develops within incidental interactions, learning to stay in interactions appears to be a skill critical to becoming a social communicator (Girolometto, 1988; MacDonald, 1989; Mahoney, 1988).

With the social play scale, adults are observed for critical skills such as playing in the same activity as the child and playing more than talking, questioning, commanding, or attempting to teach the child. Unless adults find interaction with the child inherently rewarding, they may be unlikely to make themselves attractive enough to the child to gain his interest. And unless the adult is more interesting than the other distractions in the child's world, the child is unlikely to stay long enough to find it rewarding and to learn new skills. The degree to which the adult's level of play matches the child's may be the degree to which the child attempts to become more like the adult.

The ECO Scales are an attempt to assess adults' willingness to abandon their own agendas long enough to give the child the freedom necessary for expression.

The social play scale also assumes that a child will advance socially and communicatively to the extent that he stays in interactions with others and that he has models that allow him to participate playfully while showing him developmentally advanced things he can do. While this scale addresses skills often observed in infants and their parents (Bullowa, 1979; Field, 1980; Stern, 1985), it applies to a great range of children. Many children with delays have some language or communication but are extremely limited in their range and rate of interactions (Girolometto, 1986; Prizant, 1983). These children need to stay in interactions if they are to learn to activate their competencies and continue to learn. The common observation that children with delays know much more than they communicate relates directly to the need to help children become more interactive.

Case Study: John, Infant At-Risk

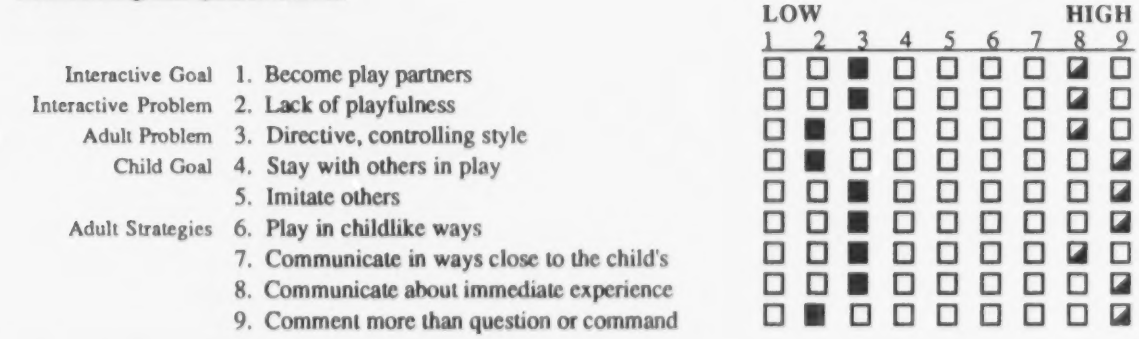
The following is a case study observation of John, an at-risk infant and his mother, Debbie. John and Debbie will be described before and after they became involved in an interactional treatment program (Gillette, 1989). Profiles of the ECO Scale performance will also be illustrated. (Throughout this article, the numbers in parentheses refer to the corresponding ECO Scale item numbers). In addition, the program itself, including John's goals and Debbie's interactive strategies, will be discussed.

All case studies are presented with the related ECO Scale items. All ratings are based on the following scale: 1= low; 5= mid; 9= high.

Pre program. John, age 5 months, and his mother Debbie, are useful to illustrate the need for this competency. John rarely stayed in interactions longer than brief periods of time (4). He made many movements and a few sounds, but neither appeared to be in response to people. John oriented to his mother, yet seldom did things she did (5). John appeared to contact his mother occasionally but had little effect on her. Debbie dominated her interactions with her son, mismatching him with actions and verbalizations far beyond his abilities (3). She seldom gave John sufficient time to respond to her before stimulating him again. A strength for Debbie was that she often played in child like ways. However, her interactions often appeared to involve deliberate effort for her and frequently resulted in John turning away.

ECO Scales

Becoming Play Partners



Pre ■ and Post ◪ rating of parent and child performance.

ECO program. The ECO clinician worked with Debbie to build a more balanced, reciprocal partnership with John (1). She was encouraged to capitalize on her ability to play in child like ways (6) and match him by doing or saying one thing at his level (7) rather than far above his abilities. Through ECO readings (MacDonald, 1989; Gillette & MacDonald, 1989) and conversations with the clinician, she recognized that communication develops from even the simplest actions and sounds, thus learning that sound and action exchanges were essential in teaching John to communicate. Debbie was also coached to give John time to respond to her. The

clinician supported Debbie in learning that when she did less and waited, John would have opportunities to do more. The clinician showed Debbie how to keep back and forth exchanges going; Debbie learned that, in order for John to learn to be social and communicative, both he and she needed to participate regularly and actively in interactions (4).

Post program. After two months of a weekly parent training program, John stays in play exchanges regularly, attending and interacting with his mother (4). He frequently imitates his mother's actions and sounds, makes some sounds of his own and waits for his mother to respond (5). John's movements and sounds are his early communications. Debbie now responds to the emerging actions and sounds which she previously ignored. Her play now closely matches that of John's (6), as he does the things she says and does (7). She frequently shows John the next interactive or communicative step. Debbie does not pressure her son to respond in any "specific" way (9); rather, she responds to and accepts any positive behavior. Debbie and John are on their way to becoming regular playful partners. Each has opportunities to influence the other successfully.

Becoming Turntaking Partners

Rationale for competency. Balanced, matched turntaking is considered in the ECO model as the first step for communicative development, regardless of the child's communicative or linguistic level. Building a turntaking habit allows the adult and child to begin the kind of relationship in which each person can spontaneously learn from the other (Bruner, 1983; Kaye, 1979).

Within the turntaking scale, adults are observed for critical skills such as waiting with anticipation and matching actions and communications. Unless adults wait and expect the child's turns, the child may not be able to work through the often slow process of learning how to play and communicate. Again, the degree to which the adult's performance level matches the child's may be the degree to which the child attempts to become more like others. The scales are an attempt to assess adults' willingness to be so finely tuned to the child's skills that they become accessible models for higher–level child performance.

Although turntaking is a component of social play and certainly of any extended communication or conversation between individuals, its necessity in communicative development is so critical that it was given the status of a separate competency in the ECO Scales. Many delayed children appear not to know the basic rules of interaction such as turntaking, waiting, responding appropriately, and staying in interactions (Field, 1980; Girolometto, 1988; MacDonald, 1989). One value of turntaking is that it supports a basic give–and–take habit that can be mastered with almost any actions and at almost any developmental level, as demonstrated by widespread findings of turntaking in infants (Kaye and Charney, 1980; Stern, 1977; Trevarthen, 1979). Turntaking facilitates skills that serve the child as he progresses from play to communication to conversation. Thus, turntaking appears to be a highly efficient and generalizable tool for learning to communicate (Wells, 1981).

Rote turntaking is not the goal, however. The ECO Scales assess the range of action exchanges, understanding that those actions are the child's first communications as well as the cognitive sources of verbal meanings. The variety of children's actions is assessed with the understanding that the first stable interactions will develop from the child's current spontaneous repertoire. One of the earliest clinical goals is to extend the child's actions into interactions. The nature and function of the actions are less important than the ease with which they are shaped into playful give–and–take exchanges that set the stage for communicative learning.

Becoming Turntaking Partners – Case Study: Hoffman, A Deaf 2 1/2 Year Old

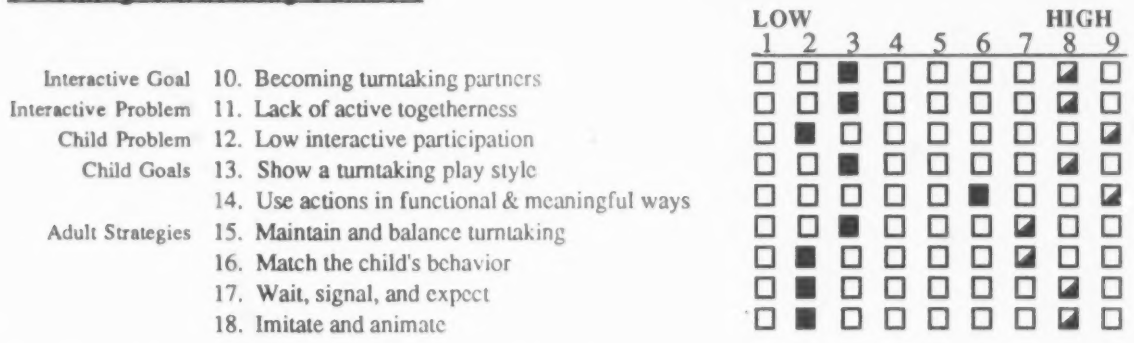
Pre program. Hoffman, a deaf 2 1/2 year old with a bilateral loss over 90 dB across the speech range, was an animated boy who seemed eager for interactions. Although he frequently contacted his significant adults, the play exchanges seldom lasted more than one exchange (12). Similarly, contacts initiated by others were quickly terminated by Hoffman after one or two turn exchanges; he then often retreated to play alone. Hoffman's parents expected their son to use sign language with them, but did not keep him in interactions at his level (11). Frequently, the adults dominated the activity by taking many more turns than Hoffman and often using many signs and words on their turn which were beyond his capabilities (16). Similarly, they often did not give the

boy much time to take his turn (17); and he didn't seem to know he was expected to participate. Hoffman's adults provided him with the sign labels for many objects and actions in his environment but lacked the animation and enjoyment necessary to encourage Hoffman to play with them (18).

ECO program. Hoffman's mother, father, and preschool teacher learned to match the boy's gestures and actions and to keep him in extended interactions with no specific tasks to be met. In other words, they began playing in ways that Hoffman could play, and doing things he could do. They learned to accept his emerging forms of communication as actual communication attempts (16). By doing things he could do, and getting into his world, they were much more successful in maintaining balanced turntaking relationships with the boy (15). An ECO clinician showed Hoffman's adults that by imitating him (18), and waiting expectantly and silently for a response (17), Hoffman would frequently stay willingly in reciprocal relationships. Videotape demonstrations of other families were used to demonstrate to the adults that intentional communication emerges from these habits of back and forth play routines.

ECO Scales

Becoming Turntaking Partners



Pre ■ and Post ◪ rating of parent and child performance.

Post program. After four months of a parent program that involved staying first in imitative, then spontaneous turntaking exchanges, Hoffman was staying for at least five turn exchanges and often more (13). He willingly exchanged actions and idiosyncratic signs with a variety of adults, and occasionally with peers and his 18 month old sister. Hoffman now initiates, responds, and maintains interactions habitually using signs (13). Hoffman's adults promote turntaking play by using actions, gestures, and signs at his level, and often a step above (16); giving the boy time to respond while letting him know he is expected to take a turn (17); and playing animatedly with Hoffman (18). These strategies together seem to invite Hoffman to stay interacting longer, for additional learning. Hoffman's adults no longer "run the show"; they now share the lead and balance their turns with the boy.

Becoming Nonverbal Communication Partners

Rationale for competency. The term "communication" in this approach speaks to the finding that before children talk, they often have a creative system of nonverbal communication (Greenspan, 1985; Sugarman, 1984). Several researchers have charted a continuity from playful actions to communications with gestures and sounds and then into messages symbolized in words (Bates, 1976; Bullowa, 1979; Siegel–Causey, et. al, 1987). Given that the ECO model attempts to link adults and children in interactive learning, it is concerned with the degree to which adults match and respond sensitively to the child's early communications without words. The interactive match and turntaking strategies begun as the social play competency developed must continue into the communicative phases if the child is to become a habitual communicator.

A major goal for adults is to respond to the child's emerging sounds and gestures with communications that show the child a next step rather than using language that is several developmental stages beyond the child. If adults fail to respond to early communications with

something the child can do, then the child with delays may communicate less and not build a resilient habit of communicating in any way he can (Hunt, 1961; Mahoney, Powell, Finnegan, Fors, & Wood, 1986; Vygotsky, 1978).

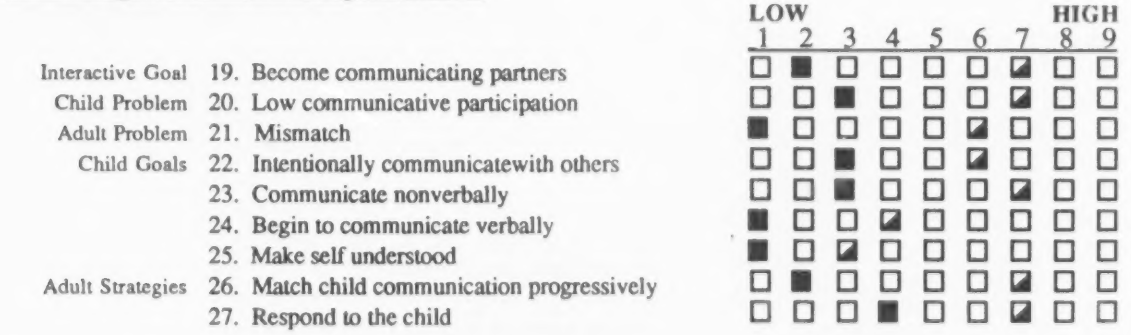
Recent studies of the origins of intentional communication highlight the vital role of caregivers in showing children how noncommunicative actions and sounds can become intentional communications. Bates (1976) has carefully described a child's perlocutionary phase as the time in which caregivers respond to the child's random and play behavior as if he were sending a message. This process, repeated over time, appears to help the child learn to communicate intentionally with those very movements once used without social intentions. Sugarman (1984) further described the interactional nature of preverbal communication, noting that some children who are preverbal are able to communicate their intentions pragmatically, by acting in ways that appropriately indicate their goals and clearly orienting those actions toward the person with whom they are communicating. Many children with delays appear to be arrested at the nonverbal level with communications that are often idiosyncratic and effective only within a few relationships. Consequently, the ECO model pays considerable attention to the development of preverbal communicative relations.

Becoming Nonverbal Communication Partners – Case Study: Mark, Three Year Old Boy with Down Syndrome

Pre program. Mark is a three–year–old child with Down Syndrome. His preschool teacher, Katrina, and his mother, Marge, described him as cooperative and responsive, but not communicative. Their description was supported by our analysis. Mark was not only responsive, but could also be described as a passive interactor. He seldom initiated activities or exchanges with others, which greatly reduced his opportunities to improve his communication. Mark imitated others' sounds, but did not regularly send messages of his own (20). When he made sounds nonimitatively, he mainly produced vowels and few consonants; thus, his sound repertoire was limited. Marge mismatched Mark's expressive language abilities (21), in that she used phrases and sentences to communicate with him although he was nonverbal. She narrated his activities without getting involved in his play and without giving him a chance to respond. Marge also missed many opportunities to respond to her son's emerging communications or to translate his actions into messages (27). She seemed not to know that the actions and sounds he made were his first steps toward more meaningful communication.

ECO Scales

Becoming Communicating Partners


LOW
HIGH
1 2 3 4 5 6 7 8 9
Interactive Goal 19. Become communicating partners
Child Problem 20. Low communicative participation
Adult Problem 21. Mismatch
Child Goals 22. Intentionally communicatewith others
23. Communicate nonverbally
24. Begin to communicate verbally
25. Make self understood
Adult Strategies 26. Match child communication progressively
27. Respond to the child

Pre ■ and Post ◪ rating of parent and child performance.

ECO Program

Matching was the strategy given primary attention during the family's early months in the program. The clinician demonstrated how to communicate at Mark's level using sounds and, often at the next communicative level, single word messages (26). The clinicians explained that matching and progressively matching Mark would invite him to become an active participant as he

would experience success. Marge was further encouraged to respond to Mark's little actions and sounds, treating these as communicative (27). By doing so, she would be showing Mark that what he said and did had an effect on people. All of this was done in the context of turntaking play, capitalizing on Mark's action skills and playful interests.

Post program. After four months, Mark sent messages more frequently and often seemed to do so purposefully (22). He communicated nonverbally, using gestures, sounds, and movements (23), and often created functional signs in his message sending. At this time, Mark continues to only rarely change his messages when he isn't understood by others (25). Marge now matched her son much of the time (26). She communicated with him using frequent sounds and occasional words. By progressively matching her son, she bridged the gap from gestures to sounds and sounds to words. Marge treated many of Mark's actions and sounds as communicative; she responded with sensitivity to Mark's communicative intent (27).

Becoming Language Partners

Rationale for competency. The ECO Scales' language competencies involve the development of vocabulary and topics, again within an interactional perspective. One key notion involved in spontaneous language–learning is semantic contingency or cognitive match; that is, the degree to which the adult's speech is meaningfully related to the child's actions, perceptions and intentions (Cross, 1978; Wells, 1981). In an extensive review of research into the role of parent–child interactions during language development, Snow (1984) concluded that the most striking and reproductible finding about social interaction and language acquisition is the finding that semantically contingent speech facilitates children's learning of language. Semantically contingent speech includes imitations and expansions, direct references to the child's actions, correct interpretations of the child's intentions, confirmations, and many other kinds of messages. Less–than–desirable adult language includes rejection or disapprovals of the child's communications, changes of topic away from the child's interests, and excessive use of negatives. The ECO Scales attempt to assess the degree to which the adult codes the child's world sensitively in words that bridge the child's nonverbal meanings to language.

The scales also assess the child's current vocabulary in terms of those classes of meanings that account for most of a child's first language (Bloom and Lahey, 1978; Brown, 1973; MacDonald, 1978). Concepts, such as agents, actions, objects, and locations, account for a substantial portion of the functional language of children's first words and sentences. The concern for this child–based vocabulary comes from the recurrent observation that many children with delays know academically related vocabulary such as numbers and colors, but appear limited in words that allow them to express their experiences and communicative intentions. The ECO model attempts to encourage adults to communicate with a vocabulary that codes children's experiences rather than adult or academic intentions. The model is also concerned with building topics in a cohesive manner that shows the child how to attend to one subject and build his attention to gradually expanding themes.

Becoming Language Partners – Case Study: Ben, Four Year Old Autistic Boy

Pre program. Ben was a four–year–old boy with pervasive autistic–like features, such as nonsocial speech, perseveration, stereotypic movements and a general lack of engagement with people. While Ben used one to three word phrases, he usually did not direct them to others except in times of need (29). Thus, while he did have language, he did not regularly interact or communicate in ways that would build social relationships.

Ben's mother, Rebecca, related to the boy in a generally directive non–playful style. She mismatched the boy's language by using adult level language in questions and commands which the boy invariably ignored (32). She reported that she believed she should drill Ben in words to prepare him for school but revealed that she did not feel very successful in that task (33).

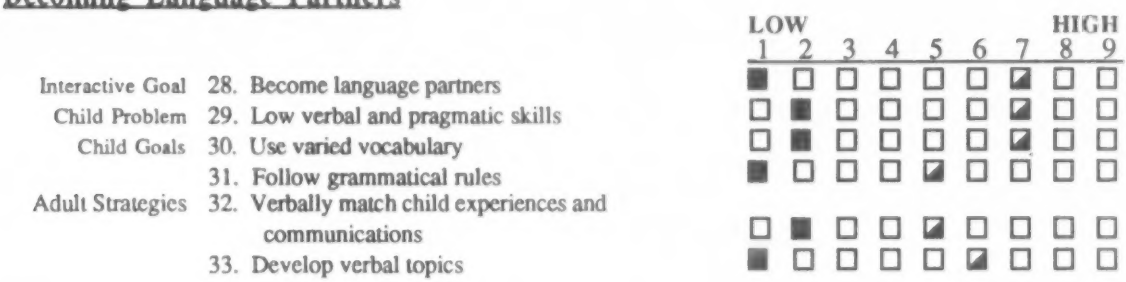
ECO program. The clinical treatment consisted first of educating Ben's mother to the social processes he needed in order to become an effective social communicator. The targets and strategies in the ECO Scales were demonstrated with Ben and discussed with instructional materials (Gillette & MacDonald, 1989). Concurrently, the clinician coached Ben's mother in an interaction style that was less directive, more matched, and more responsive to the child's abilities and interests (32). By reducing questions and commands and by communicating in ways the child

could do, the mother allowed Ben more freedom to generate language from his own knowledge and interests.

Post program. Ben and his mother were both resilient to treatment at first. The boy's autistic–like habits were functional for him and his mother held strongly to her belief that she needed to act adult and play a directive teaching role. After nine months in treatment, in which the clinician developed the beginning of a balanced communicative relationship with Ben, his mother became motivated to try the strategies that appeared to be working. As she communicated more like Ben did and commented without questions (33), Ben stayed more with her and began to communicate, first imitatively, then socially and spontaneously (28).

ECO Scales

Becoming Language Partners



Pre ■ and Post ◪ rating of parent and child performance.

Becoming Conversation Partners

Rationale for competency. Closely related to the concern for language is the concern for the variety of uses the child makes of language. It is not sufficient to ensure that children have language; they must also use it to build social and functional relationships with the language (Lund and Duchan, 1983). The gap between knowledge and communication is perhaps no wider than in those children with delays who have a substantial vocabulary but rarely use it to make friends or learn on their own. The large number of passive children with delays has led to the question of whether these children use language for a sufficient range of reasons to build conversational relations needed for social, educational, and vocational success. Video mediated studies suggest that many children communicate more for instrumental reasons (such as demands, to build social contacts, and to get needs met) than for social reasons (such as comments and replies) which are the basic tools for enduring conversations (Halliday, 1975).

Adults also may be limited in their communicative pragmatics with children. A directive or controlling style that limits the child's options for participation is becoming increasingly evident in clinical studies (MacDonald and Gillette, 1984) as well as research investigations (Mahoney, 1988). The ECO Scales assess the conversational relationship between child and adult in terms of the variety of instrumental and social intentions that are required for balanced and generative conversations. Such a variety of pragmatics or communicative purposes is essential for children with delays. Because adults may feel pressured to play a directive teaching role, a major goal of the ECO model is to build relationships that are low in stress and pressure to achieve, and high in conversational relations that build enjoyable bonds for spontaneous social learning.

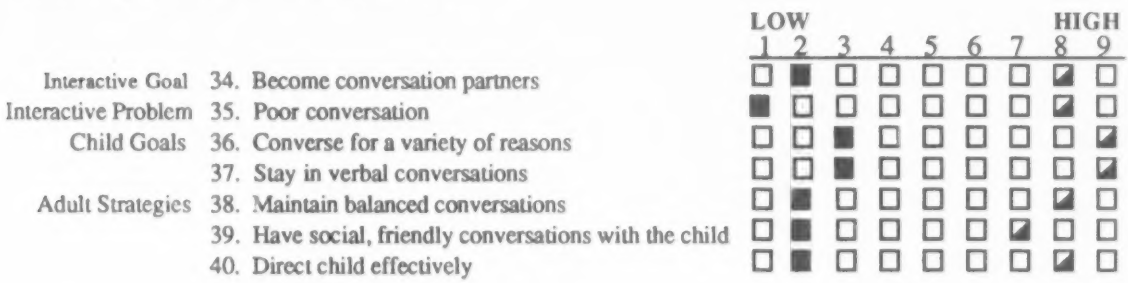
Becoming Conversation Partners – Case Study: Kenny, Six Year Old With Learning Disabilities

Pre program. Kenny is considered learning disabled and language delayed. His mom, Ev, teaches third grade. As a teacher, she was concerned with Kenny's academic and cognitive development before the treatment program began. Ev frequently asked Kenny many questions as he played (35). She quizzed him on colors, numbers, shapes, and a variety of other topics. Kenny either responded briefly with one or two words, or didn't respond at all (37). He was primarily a responsive communicator and took far fewer turns than his mother. Kenny seemed to be communicating less than he knew. The two did not build conversations with each other in

which each contributed equally to the topic (35, 37). Their time together seemed more like work for Ev, and it didn't seem enjoyable for Kenny either.

ECO program. A primary goal of this parent program was to help Ev and Kenny become conversational partners (34). When the ECO clinicians met them, their relationship was more of a teacher–pupil one than a partnership. Now, it was necessary for the pair to communicate for social reasons as well as for "teaching" (36). The clinician explained to Ev that Kenny needed to use his language to build conversational relations needed for social, educational, and vocational success. Ev was coached to have friendly, less stressful conversations with her son (39), and allow him the freedom to respond in any way he was able. One particularly useful strategy for Ev was making comments related to what Kenny was doing or saying rather than asking questions or giving commands. She found that comments allowed their interactions to continue back and forth, while questions limited Kenny's responses often ended their conversation altogether. These strategies were selected to assist Kenny in becoming an active rather than passive communicator (37).

ECO Scales
Becoming Conversation Partners


LOW
HIGH
1 2 3 4 5 6 7 8 9
Interactive Goal 34. Become conversation partners
Interactive Problem 35. Poor conversation
Child Goals 36. Converse for a variety of reasons
37. Stay in verbal conversations
Adult Strategies 38. Maintain balanced conversations
39. Have social, friendly conversations with the child
40. Direct child effectively

Pre ■ and Post ◪ rating of parent and child performance.

Post program. After three months, Kenny and Ev appeared to enjoy their conversational time together. The partners talked about a variety of topics including past, present, and future events, and Ev accepted what Kenny said without pressure for any particular response (39). She now made open–ended comments related to Kenny's actions and words and allowed him freedom of expression by limiting her use of questions and commands to only genuine ones (40). Kenny now takes an active role in their conversations together. He balances turns with his mother and is beginning to develop conversational topics with her (37). While the pair communicate for many reasons, their primary communicative purpose together is social (36).

Discussion. The present assessment model addresses directly the interactive behavior of both the child and his significant adults. The critical question of this model, then, is: what can children and adults do together to progress from not regularly interacting to having regular conversations. The model assumes that adequate assessment of communication development must include the social and communicative behavior of both the child and his significant adults. The model proposes that a child learns to communicate with his significant others along a continuum of at least five developmental competencies -- social play, turntaking, nonverbal communication, language, and conversation. The current assessment approach is one attempt to address the issue of early intervention with at–risk children and ones with delays in communication. The approach also addresses directly the need for active participation of those significant adults who are in the most ready position to assist the child in natural communication development.

Assessment and interaction is a continuous process. This model provides not only information about the status of interactive and communicative performance, but assists in designing and monitoring programs.

Table 1: Central Component to the ECO Approach to Assessment.

COMPETENCIES PROFILE

BECOMING PLAY PARTNERS

Interactive Goal	1. Become play partners
Interactive Problem	2. Lack of playfulness
Adult Problem	3. Directive, controlling style
Child Goal	4. Stay with others in play
	5. Imitate others
Adult Strategies	6. Play in childlike ways
	7. Communicate in ways close to the child's
	8. Communicate about immediate experience
	9. Comment more than question or command

BECOMING TURNTAKING PARTNERS

Interactive Goal	10. Becoming turntaking partners
Interactive Problem	11. Lack of active togetherness
Child Problem	12. Low interactive participation
Child Goals	13. Show a turntaking play style
	14. Use actions in functional & meaningful ways
Adult Strategies	15. Maintain and balance turntaking
	16. Match the child's behavior
	17. Wait, signal, and expect
	18. Imitate and animate

BECOMING COMMUNICATING PARTNERS

Interactive Goal	19. Become communicating partners
Child Problem	20. Low communicative participation
Adult Problem	21. Mismatch
Child Goals	22. Intentionally communicate with others
	23. Communicate nonverbally
	24. Begin to communicate verbally
	25. Make self understood
Adult Strategies	26. Match child communication progressively
	27. Respond to the child

BECOMING LANGUAGE PARTNERS

Interactive Goal	28. Become language partners
Child Problem	29. Low verbal and pragmatic skills
Child Goals	30. Use varied vocabulary
	31. Follow grammatical rules
Adult Strategies	32. Verbally match child experiences & communications
	33. Develop verbal topics

BECOMING CONVERSATION PARTNERS

Interactive Goal	34. Become conversation partners
Interactive Problem	35. Poor conversation
Child Goals	36. Converse for a variety of reasons
	37. Stay in verbal conversations
Adult Strategies	38. Maintain balanced conversations
	39. Have social, friendly conversations with the child
	40. Direct child effectively

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ASHA 1990
Handouts

ECO MODEL FOR SOCIAL & COMMUNICATIVE DEVELOPMENT

A FEW DEFINITIONS

The major assumption of the model is: children learn to communicate as relationships evolve between them and their significant partners. Consequently, this interactive development viewpoint involves terms with meanings that may differ from traditional definitions.

ECO: for ecological, indicating that children develop in interpersonal contexts; thus adequate study and intervention must include at least two partners, often the child and parent/professional (parent, SLP, teacher). Thus, adults and peers must be a target of change as much as the child. Traditionally programs focus primarily on the child's goals; ECO focuses equally on the adult's goals and the social context.

Partnership: a dyad or relationship in which both persons develop together as a reciprocal function of the other's interactions, and their influence lasts beyond physical contact.

Preconversational Child: this term refers to the population of persons to which ECO is intended, that is, a child (or delayed adult) who has yet to develop a generalized social use of language across contexts and pragmatic intentions.

Social Play: motor or communicative interactions which are shared primarily for the purpose of social exchange and less to accomplish a task.

Turntaking: the habit of exchanging between persons in a reciprocal (two–way and meaningful) and relatively balanced manner.

Nonverbal Communication: The habit of sending and receiving messages in forms such as gesture, movement, and sound.

Language: the interactive habit of exchanging messages in verbal symbols with a focus of topic development and child–experience meanings (in contrast to academic language).

Conversation: the pragmatic habit of engaging in extended verbal exchanges for a variety of reasons, such as self–directed, instrumental, and social.

READINGS RELATING TO THE ECO MODEL FOR SOCIAL & COMMUNICATIVE DEVELOPMENT

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Becoming Partners with Children: From Play to Conversation, James D. MacDonald. A developmental text and clinical guide for professionals, students and parents.

ECOScales and ECOScales Manual (with T.A. Hutchinson). An interactive assessment model for treatment planning and monitoring.

Ecological Programs for Communicating Partnerships: Models and Cases. A professional guide for planning and implementing ECO programs.

ECO Resources – A Social and Communicative Curriculum for Infants and Preconversational Children. Practical teaching and clinical tools for implementing the model in therapy, homes, and classrooms. Materials for inservice training as well as direct service.

An Introduction to the ECO Program: A video teaching tape illustrating the assessment and treatment model with children with a variety of delays interacting with parents and professionals.

CHILD COMPETENCIES

What do children need to do to become communicative?

Social Play

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THE OTHER SIDE OF THE PARTNERSHIP

The role of significant others. What you teachers and parents can do to help children communicate.

Balance

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Emotional Attachment

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ECO MODEL FOR
COMMUNICATION DEVELOPMENT

James D. MacDonald and Yvonne Gillette

Becoming Partners in Play and Daily Living

PROBLEM: Child and adult rarely show the active joint togetherness needed to develop conversation skills. They operate in different worlds – child in an action world, adult in a talk world.

CONSEQUENCE: Contact with others may be limited to rare or brief contacts that are task oriented, adult directed, ignoring child's natural motivations for spontaneous play.

CHILD GOAL: Stay longer with others and behave like others in both play and daily living contacts.

ADULT STRATEGY: Play more than talk, match child's play and actions to become a motivating partner who models developmental steps the child can do to assure regular success.

EXPECTED BENEFITS: Child becomes more of a social person, and adults learn they can better teach the child through the social partnerships they build together.

Becoming Turntaking Partners

PROBLEM: Children do not build an interactive habit when adults initiate and then dominate activities often allowing only brief contacts.

CONSEQUENCE: Limited involvement in the regular, continuous, balanced routines necessary for social and communication development.

CHILD GOAL: Learn to follow the rule of turntaking, "give in order to get."

ADULT STRATEGY: MATCH – act and communicate close to the child's level, then WAIT for child's turn. Matching and waiting provides models the child can succeed at and the time to process and produce.

EXPECTED BENEFIT: Child will become a sensitive interactor who spontaneously learns from others. Adults will have more successes with the child.

Becoming Communicating Partners

PROBLEM: Children communicate infrequently and in immature ways while adults communicate far above the child's level and ignore or correct child's attempts to communicate.

CONSEQUENCE: Communicative exchanges are unlikely to develop.

CHILD GOAL: Become a frequent communicator, exchanging increasingly more mature messages with others both to initiate and to respond.

ADULT STRATEGY: Respond to child playfully and with a matched style that the child can use as a model toward more mature communication.

EXPECTED BENEFIT: A frequent message exchanging habit between partners that allows communication learning in casual contacts.

Becoming Language Learning Partners

PROBLEM: Children communicate much less than their activities show they know and often fail to maintain a topic. Adults often use adult or academically oriented language that has little motivation or functional use for the child.

CONSEQUENCE: Child and adult share limited meanings so their relationship provides less learning than it could.

CHILD GOAL: Use a variety of words (agent, action, object, location) and word combinations related to a topic.

ADULT STRATEGY: Use child motivated language that translates the child's experiences and nonverbal communications into worlds that show him the next ways to talk and stay on a topic.

EXPECTED BENEFIT: Child comes to use language as a self-generating tool for learning and communicating and to use people as natural language learning resources.

Becoming Conversation Partners

PROBLEM: Child communicates primarily for immediate needs or from a passive, non-participatory role, while adults take a directive, controlling role allowing few true conversations between the partners.

CONSEQUENCE: Brief, imbalanced, problem-solving conversations rather than spontaneous conversational relationships.

CHILD GOAL: Use conversation for active learning and social sharing - becomes active as an initiator as well as a responder in conversational use of varied pragmatics.

ADULT STRATEGY: Comment more than question or command to build a socially contingent relationship, sharing more than controlling to maintain increasingly longer and more appropriate conversation.

EXPECTED BENEFIT: Conversational partnerships become the primary way of interacting. Such partnerships allow limitless language modelling, feedback and practice aimed toward mastering a variety of social roles.

Discussion of the Social and Communicative Profiles

The interaction profile of Jack and his mother Robin, (overside) can also be discussed in terms of the five competency areas: social play, turntaking, communication, language, and conversation. Notice that in this format Child Goals, Adult Strategies, Interactive Goals, and Problems are grouped as they relate to the specific competency.

Becoming Play Partners. Jack and Robin's play partnership has a rating of "5." They are fairly playful in their relationship, but Robin's priority problem is that she is very directive during the interactions [3]. Note that Jack's play skills are very strong [4, 5]. Target strategies for his mother are to comment more than question or command and play in childlike ways [6, 9]. She already demonstrates skill in matching Jack by communicating similarly to him and communicating about the actions, objects, and people in his immediate environment.

Becoming Turntaking Partners. The pair is developing a habit of taking turns in their play together [10]. Jack uses actions functionally in his play [14] and is able to take turns successfully with his mother [7]. Jack's mother is also developing her ability to keep her son in give-and-take exchanges [15, 16, 18]. She reports that giving Jack sufficient time to respond is difficult for her, and she often finds herself counting to 10 so that she doesn't send another message too quickly [17].

Becoming Communicating Partners. The partners exchange messages in a matched way [19]. Jack has recently begun sending more and more intentional messages to others [22]. He uses both verbal and nonverbal messages [23, 24], while his mother primarily conveys her messages to him through verbal means [21]. Jack is often difficult to understand; however, he clarifies his messages when adults let him know that his words were unclear (either by imitating him, waiting, or matching) [25]. While Robin is able to provide Jack with the next communicative step [26], a goal for her is to respond to *all* of his communications [27].

Becoming Language Partners. Jack and Robin have a low-mind rating of "4" on their language partnership. A problem area for Jack is his verbal and pragmatic skills [29]. He has a limited pragmatic range, mainly using responses rather than initiations; he has a limited vocabulary [30], often using a few words to convey several meanings; and he is not yet applying grammatical rules to his word combinations [31]. Robin successfully matches Jack's experiences and communications, commenting on the actions, people, and objects in his environment [32]. However, a goal for her now is to develop topics with her son by building topics using new ideas and vocabulary matched to his level [33].

Becoming Conversation Partners. The area of conversation is the pair's weakest [34]. Although they do communicate for social reasons some of the time [36], Robin often controls the interactions, using questions and commands to get her son to perform [38]. In addition, Jack plays more of a passive than an active role in conversations [35]. Some areas that the boy needs to improve are his ability to stay in increasingly longer conversations and converse with others for a variety of reasons [36, 37]. Robin also has several goals in the area of conversation, all of which contribute to improving her extended back-and-forth conversations and topic-building abilities with Jack [23, 39, 40].

For information on the reliability and validity of the ECO Scales and for experimental use measuring treatment effects, contact James D. MacDonald at The Ohio State University.

ECO SCALES - SOCIAL COMMUNICATIVE PROFILE

BECOMING PLAY PARTNERS

		1	2	3	4	5	6	7	8	9
Interactive Goal	1. Become play partners					X				
Interactive Problem	2. Lack of playfulness				X					
Adult Problem	3. Directive, controlling style			X						
Child Goal	4. Stay with others in play								X	
	5. Imitate others								X	
Adult Strategies	6. Play in childlike ways					X				
	7. Communicate in ways close to the child's							X		
	8. Communicate about immediate experience							X		
	9. Comment more than question or command			X						

BECOMING TURNTAKING PARTNERS

		1	2	3	4	5	6	7	8	9
Interactive Goal	10. Become turntaking partners						X			
Interactive Problem	11. Lack of active togetherness				X					
Child Problem	12. Low interactive participation								X	
Child Goals	13. Show a turntaking play style							X		
	14. Use actions in functional and meaningful ways								X	
Adult Strategies	15. Maintain and balance turntaking					X				
	16. Match the child's behavior							X		
	17. Wait, signal, and expect					X				
	18. Imitate and animate						X			

BECOMING COMMUNICATING PARTNERS

		1	2	3	4	5	6	7	8	9
Interactive Goal	19. Become communicating partners							X		
Child Problem	20. Low communicative participation								X	
Adult Problem	21. Mismatch							X		
Child Goals	22. Intentionally communicate with others								X	
	23. Communicate nonverbally						X			
	24. Begin to communicate verbally						X			
	25. Make self understood						X			
Adult Strategies	26. Match child communication progressively							X		
	27. Respond to the child					X				

BECOMING LANGUAGE PARTNERS

		1	2	3	4	5	6	7	8	9
Interactive Goal	28. Become language partners				X					
Child Problem	29. Low verbal and pragmatic skills		X							
Child Goals	30. Use varied vocabulary			X						
	31. Follow grammatical rules			X						
Adult Strategies	32. Verbally match child experiences and communications							X		
	33. Develop verbal topics				X					

BECOMING CONVERSATION PARTNERS

		1	2	3	4	5	6	7	8	9
Interactive Goal	34. Become conversation partners		X							
Interactive Problem	35. Poor conversations			X						
Child Goals	36. Converse for a variety of reasons				X					
	37. Stay in verbal conversations				X					
Adult Strategies	38. Maintain balanced conversations				X					
	39. Have social, friendly conversations with the child				X					
	40. Direct child effectively				X					

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ECO ACE
(Adult Communication Elixir)

Adult: _____ Observer: _____ Activity or Time: _____
With whom (name(s) / # children): _____ Date: _____

Every reciprocal interaction is learning. Avoiding interaction is PLAYING HOOKY from learning to communicate.

Describe how often you did or saw the events below. Circle the number that applies.
1= Never 2= Seldom 3= Occasionally 4= Often 5= Consistently

A. Interactions and Balance	1	2	3	4	5	Comments
1. Interact frequently and as much as the child	1	2	3	4	5	
2. Initiate contacts	1	2	3	4	5	
3. Respond to child	1	2	3	4	5	
4. Keep the child in interactions	1	2	3	4	5	
5. Communicate for a response, then wait	1	2	3	4	5	
6. Keep a topic going	1	2	3	4	5	
7. Keep a back and forth flow	1	2	3	4	5	
B. Be Matched (Progressively)						
1. Actions	1	2	3	4	5	
2. Show child how next to communicate	1	2	3	4	5	
3. Meaning / Ideas (cognitive)	1	2	3	4	5	
4. Nonverbal communication	1	2	3	4	5	
5. Language level	1	2	3	4	5	
6. Pragmatic intention	1	2	3	4	5	
7. Be child-like (i.e., "Gery-like"; "Susan-like")	1	2	3	4	5	
C. Be Responsive						
1. To child's interests	1	2	3	4	5	
2. To child's pace	1	2	3	4	5	
3. To child's changes	1	2	3	4	5	
4. To child's actions as communications	1	2	3	4	5	
5. To child's nonverbal communications	1	2	3	4	5	
6. To child's language	1	2	3	4	5	
7. To child's emotions	1	2	3	4	5	
D. Be Nondirective						
1. Follow child's lead	1	2	3	4	5	
2. Comment (increase)	1	2	3	4	5	
3. Questions (decrease)	1	2	3	4	5	
4. Commands / directives (decrease)	1	2	3	4	5	
5. Lead appropriately	1	2	3	4	5	
6. Limit questions to authentic ones	1	2	3	4	5	
E. Be Emotionally Attached						
1. Actively enjoy child	1	2	3	4	5	
2. Make child feel comfortable	1	2	3	4	5	
3. Show child-like playful style	1	2	3	4	5	
4. Feel competent with child	1	2	3	4	5	
5. Actively reduce pressure	1	2	3	4	5	
6. Be animated	1	2	3	4	5	
7. Reduce nonverbal and verbal judgements	1	2	3	4	5	
F. Shape Child's Behavior Through Communication						
1. Fertilize the flowers (positive or new developments)	1	2	3	4	5	
2. Don't fertilize the weeds (disruptive / immature)	1	2	3	4	5	

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